



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,750	11/29/2001	Wataru Hattori	045054-0147	2039

22428 7590 03/23/2005
FOLEY AND LARDNER
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER

PHAM, TUAN

ART UNIT PAPER NUMBER

2643

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/995,750	HATTORI, WATARU	
	Examiner	Art Unit	
	TUAN A PHAM	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Lim (U.S. Patent No.: 5,995,851).

Regarding claims 1, 12, 16, and 18, the prior art teaches a signal processor and method, comprising (see figure 2): a signal processing unit covered with a vacuum insulation layer in a vacuum vessel (see figure 2, processing unit is included BPF 2 and LNA 3, vacuum insulation layer 6, vacuum vessel 5, page 2, ln.1-20); a cooling mechanism that cools the signal processing unit (see figure 2, refrigerator 7, page 2, ln.1-20); a getter material of a heat-activation type that controls increase of gas pressure inside the vacuum insulation layer (see figure 2, getter material 12, page 3, ln.17-29); and a heater that heats to activate the getter material (see figure 2, heater 13, page 4, ln.1-9).

It should be noticed that the prior art fails to teach controller that switches ON the heater in advance before cooling begins. However, Lim teaches such features (see figure 6b, controlling portion 40, transistors DQ3-DQ6, col.5, ln.35-46, col.8, ln.23-54, col.9, ln.1-31, col.10, ln.1-25. For example, the controlling portion 40 will detect the temperature in side the container 100, if the temperature drop below the preset the temperature range, both transistors DQ4 and DQ5 are turn on to operate the heating mode. When the heating mode is on the temperature of signal processing is starting to rise, the controlling portion will detect the temperature in side the container, if the temperature goes over the preset temperature range then both transistors DQ3 and DQ6 are turn on to operate the cooling mode).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Lim to the prior art, in order to keep the temperature of the signal processor constant as suggested by Lim at column 3, lines 6-14.

Regarding claim 2, Lim further teaches the signal processing unit comprises: a band-pass filter for selecting a predetermined signal from a receiving signal input from an antenna terminal; and a low noise amplifier for amplifying an output from said band-pass filter to a predetermined level with low noise (see figure 3, BPF11, LNA 12, col.5, ln.30-35).

Regarding claim 3, Lim further teaches the electrification controller comprises: a relay that switches electrification either to the cooling mechanism or the heater; and a sequencer that controls the relay (see figure 6b, controlling portion 40, col.9, ln.11-35).

Regarding claim 4, Lim further teaches the signal processing unit makes up of a superconductive material, and the cooling mechanism has a capability to cool the signal processing unit until the superconductive material becomes in a superconductive state (see col.3, ln.24-40, it is clearly the controlling portion operate in the cooling mode to cooling down the superconductive material until it becomes a normal state).

Regarding claim 5, Lim further teaches the superconductive material is a high-temperature superconductor having superconductive characteristics at a high temperature (see col.3, ln.24-40).

Regarding claim 7, Lim further teaches "after the predetermined condition is the established" equals "after a passage of a certain period of time" (see col.9, ln.12-32, the controlling portion is controlled the time changed in both cooling mode and heating mode).

Regarding claims 6, 13, 17, and 19, the prior art teaches a signal processor and method, comprising (see figure 2): a signal processing unit covered with a vacuum insulation layer in a vacuum vessel (see figure 2, processing unit is included BPF 2 and LNA 3, vacuum insulation layer 6, vacuum vessel 5, page 2, ln.1-20); a cooling mechanism that cools the signal processing unit (see figure 2, refrigerator 7, page 2, ln.1-20); a getter material of a heat-activation type that controls increase of gas pressure inside the vacuum insulation layer (see figure 2, getter material 12, page 3, ln.17-29); and a heater that heats to activate the getter material (see figure 2, heater 13, page 4, ln.1-9).

It should be noticed that the prior art fails to teach controller that selectively switches ON the heater when cooling begins and selectively switches ON the cooling mechanism after a predetermined condition is established. However, Lim teaches such features (see figure 6b, controlling portion 40, transistors DQ3-DQ6, col.5, ln.35-46, col.8, ln.23-54, col.9, ln.1-31, col.10, ln.1-25. For example, the controlling portion 40 will detect the temperature in side the container 100, if the temperature drop below the preset the temperature range, both transistors DQ4 and DQ5 are turn on to operate the heating mode. When the heating mode is on the temperature of signal processing is starting to rise, the controlling portion will predetermine the temperature in side the container, if the temperature goes over the preset temperature range then both transistors DQ3 and DQ6 are turn on to operate the cooling mode).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Lim to the prior art, in order to keep the temperature of the signal processor constant as suggested by Lim at column 3, lines 6-14.

Regarding claim 8, Lim further teaches the signal processing unit comprises: a band-pass filter for selecting a predetermined signal from a receiving signal input from an antenna terminal; and a low noise amplifier for amplifying an output from said band-pass filter to a predetermined level with low noise (see figure 3, BPF11, LNA 12, col.5, ln.30-35).

Regarding claim 9, Lim further teaches the electrification controller comprises: a relay that switches electrification either to the cooling mechanism or the heater; and a sequencer that controls the relay (see figure 6b, controlling portion 40, col.9, ln.11-35).

Regarding claim 10, Lim further teaches the signal processing unit makes up of a superconductive material, and the cooling mechanism has a capability to cool the signal processing unit until the superconductive material becomes in a superconductive state (see col.3, ln.24-40, it is clearly the controlling portion operate in the cooling mode to cooling down the superconductive material until it becomes a normal state).

Regarding claim 11, Lim further teaches the superconductive material is a high-temperature superconductor having superconductive characteristics at a high temperature (see col.3, ln.24-40).

Regarding claim 14, Lim further teaches "after the predetermined condition is the established" equals "after a passage of a certain period of time" (see col.9, ln.12-32, the controlling portion is controlled the time changed in both cooling mode and heating mode).

Regarding claim 15, Lim further teaches the signal processor implementing a change-over of switching by using a sequence program (it is obvious the controlling portion is operating by program or software).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In order to expedite the prosecution of this application, the applicants are also requested to consider the following references. Although Yandrofski et al. (U.S. Patent No. 6,205,340), Mimura et al. (U.S. Patent No. 6,480,706), Patton et al. (U.S. Patent No. 6,571,110), and Hershtig (U.S. Patent No. 6,212,404) are not applied into this Office Action; they are also called to Applicants attention. They may be used in future Office Action(s). These references are also concerned for supporting the system and method of cryoelectronic receiver front end for mobile radio system.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tuan A. Pham** whose telephone number is (703) 305-4987. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Curtis Kuntz can be reached on (703) 305-4708 and

IF PAPER HAS BEEN MISSED FROM THIS OFFICIAL ACTION PACKAGE, PLEASE CALL Customer Service at (703) 306-0377 FOR THE SUBSTITUTIONS OR COPIES.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to: (703) 872-9306

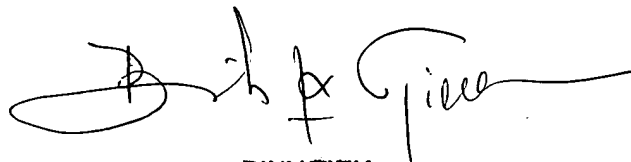
Art Unit: 2643

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington VA, Sixth Floor (Receptionist, tel. No. 703-305-4700).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have question on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit 2643
March 14, 2005
Examiner

Tuan Pham



BINH TIEU
PRIMARY EXAMINER